

Work Task D9: System Monitoring and Research of Covered Bat Species

FY06 Estimates	FY06 Actual	Cumulative Accomplishment Through FY06	FY07 Approved Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate	FY10 Proposed Estimate
\$110,000	\$99,887	\$154,887	\$100,000	\$100,000	\$100,000	\$100,000

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Start Date: FY04

Expected Duration: FY55

Long-term Goal: System monitoring and species research will be conducted for LCR MSCP bat species to determine distribution and to evaluate habitat implementation success.

Conservation Measures: AMM1, AMM6, MRM1, WRBA1, WYBA1, CLNB1, PTBB1, WRBA2, and WYBA3

Location: System-wide along the lower Colorado River below Hoover Dam.

Purpose: Conduct system monitoring and research for the distribution of covered bat species utilizing roost surveys, acoustic survey techniques, and capture techniques following a protocol developed in FY06.

Connections with Other Work Tasks (past and future): System monitoring data will be used in conjunction with post-development monitoring (F4) to determine habitat needs and characteristics of covered bat species. Data collected will be used in future habitat creation projects listed in Section E.

Project Description: Several survey techniques will be utilized to detect covered species or provide equivalent data using indicator species. Acoustic surveys, conducted with Anabat or Sonabat technology, will be used to identify foraging behavior in native riparian stands for covered bat species. Roost surveys will be conducted to track bat populations and to survey species that are not readily detected by acoustic technology, such as Townsend's big-eared bat and California leaf-nosed bat. Individual bats will be captured using techniques such as mist netting to obtain reference calls for bat identification.

Previous Activities: Indigenous bat species were surveyed annually along the LCR from 2001-2006. A Lower Colorado River Bat Monitoring Protocol was produced to assist in the development of a system-wide distribution and demography monitoring plan for covered bat species.

FY06 Accomplishments: Through coordination with state and Federal resource agencies and other interested parties, an LCR system-wide distribution and demography monitoring plan and

protocol was developed for the LCR MSCP covered bat species. This protocol was initiated in FY06. Four field trips were conducted: May 5-12, 2005, January 18-25, 2006, May 27-June 2, 2006, and September 19-24, 2006. Acoustic monitoring was done at multiple sites during most visits, as well as at Cibola Valley Conservation Area. Other recording sites were Davis Dam, LCR along the Parker Strip, LCR south of Imperial Dam, the All American Canal, Lost Lake, and Lake Havasu. During warm-season surveys, mist nets were set in the cottonwood revegetation sites at Havasu, Cibola, and Imperial NWR. Pallid bats and California leaf-nosed bats were the only species captured.

To census and monitor bat populations, exit counts were conducted twice per year (winter and spring) at mines along the LCR from Davis Dam to Yuma: Homestake (Lake Mead NRA), Jackpot (Havasu NWR), Islander and Californian (Lake Havasu BLM), Mountaineer and Stonehouse (Palm Springs BLM), Hart and 3C (Yuma BLM), and Golden Dream and Eureka (Imperial NWR). The Stonehouse Mine lower adits had been gated in fall 2005, and May was the first warm-season census. The cave *Myotis* maternity colony has accepted the gates, as have male California leaf-nosed bats. No female cave *Myotis* were captured at the Mountaineer Mine in the harp trap. However, one lactating Townsend's big-eared bat was found, along with several lactating big brown bats, California leaf-nosed bats, and pallid bats. The September surveys of the Hart and Californian mines demonstrated that they are used as breeding display sites by California leaf-nosed bats.

FY07 Activities: Acoustic surveys will continue for covered bat species at Havasu NWR, Bill Williams River NWR, Cibola NWR, and Imperial NWR. Preliminary mist netting will be completed at cottonwood-willow restoration sites on Imperial NWR, or a similar habitat creation site, to determine best net placement for netting LCR MSCP covered species or riparian indicator species. Bat populations continue to be monitored at maternity sites to determine abundance and distribution of covered bat species. Maternity sites include the Homestake, Jackpot, Islander, Californian, Mountaineer, Stonehouse, Eureka, and 3C mines, and the Palo Verde Bridge. Guano from the mine roosts may be collected for future studies.

Proposed FY08 Activities: Acoustic surveys will continue for covered bat species. Mist netting, in conjunction with post-development monitoring (F4), will take place at least twice at both mature cottonwood/willow stands and in more mature restoration areas. Bat populations will continue to be monitored at maternity sites to determine abundance and distribution of covered bat species.

Pertinent Reports: *Annual Report: Baseline Surveys and the Development of Monitoring Protocol for Lower Colorado River Bat Species, Survey Period Between April 1, 2005-September 30, 2006* will be posted on the LCR MSCP Web site.